

DRILL HOLES

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BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a mast arm Traffic Control Signal with a telephone drop at the intersection of MD 99 ( Old Frederick Rd) and Woodstock Rd in Howard County. MD 99 ( Old Frederick Rd) is assumed to run in an east-west direction.

II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA three-phase, fully-actuated mode, with the MD 99 ( Old Frederick Rd) approaches running concurrently. The Woodstock Road approaches shall run concurrently.
- A full-traffic-actuated, eight-phase controller with one four channel, rack mount loop detector amplifier and all necessary equipment, housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
- Upon completion of this project, the Contractor shall notify Mr. Robert Snyder at (410) 787-7631 to arrange for the phone line installation. The Contractor is to provide Mr. Robert Snyder with the nearest street address, zip code and phone number.

The contact persons for District #7 are as follows:

Mr. John Concannon  
Assistant District Engineer - Traffic  
Phone: (310) 624-8141

Mr. Dave Coyne  
Assistant District Engineer - Maintenance  
Phone: (310) 624-8106

Ms Andrea Abend  
District Engineer - Utility  
Phone: (301) 624-8110

Mr. Richard L. Daff, Sr.  
Chief, Traffic Operations Division  
Phone: (410) 787-7630

Mr. Ed Rodenhizer  
Signal Shop  
410-787-7652

Mr. Sonny Bailey  
Sign Shop  
410-787-7670

The power company representative is:

Baltimore Gas and Electric  
7317 Parkway Drive South  
Hanover, MD 21076  
410-859-9310

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A.

| ITEM NO. | DESCRIPTION  | QUANTITY |
|----------|--|----------|
| 9042     | Controller ASC II with telemetry   | 1 EA     |
| 9044     | Controller cabinet, size "6" with 4-channel amplifier.                             | 1 EA     |
| 9086     | Video detection interface equipment: 1-4 cameras (To be installed by signal shop). | 1 EA     |
| 9570     | Sheet aluminum signs to consist of: (ground mount)                                 | 42 SF    |
|          | D3-3 (MOD) "Woodstock Road/ NEXT SIGNAL" sign, (24"x72")                           | 2 EA     |
|          | W3-3 NEW "SIGNAL AHEAD" AHEAD" sign, (36" x 36") with hardware.                    | 2 EA     |
| 9571     | Sheet aluminum signs to consist of:  | 33 SF    |
|          | D3-2 "Old Frederick Rd " sign, (variable x 16") (dual faced) mast arm mnt          | 1 EA     |
|          | D3-2 "Woodstock Rd " sign, (variable x 16") mast arm mnt.                          | 1 EA     |
|          | M95-2 "EAST/MD 99/WEST" sign, (78" x 24") pole mnt                                 | 1 EA     |

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| ITEM NO. | DESCRIPTION  | QUANTITY |
|----------|--|----------|
| 1001     | Maintenance of traffic per assignment.                                     | 2 EA     |
| 2002     | Test Pit Excavation  | 3 C.Y.   |
| 5003     | Removal of existing permanent pavement line markings                       | 215 L.F. |
| 5006     | 24" white heat applied permanent preformed thermoplastic pavement marking. | 55 L.F.  |
| 8001     | Concrete foundation.   | 7 C.Y.   |
| 8013     | Control cable, 100', video detection camera to controller                  | 1 EA     |
| 8029     | Remove and dispose of existing material and equipment per assignment.      | 1 EA     |
| 8043     | Wood sign supports 4"x6".  | 60 L.F.  |
| 8044     | No. 6 AWG stranded bare copper ground wire.                                | 30 L.F.  |
| 8046     | 1 1/2" electrical conduit - galvanized riser.                              | 30 L.F.  |
| 8049     | 3" schedule 80 rigid polyvinyl chloride conduit - bored.                   | 85 L.F.  |
| 8051     | 2" schedule 80 rigid polyvinyl chloride conduit - trenched.                | 25 L.F.  |
| 8052     | 3" schedule 80 rigid polyvinyl chloride conduit - trenched.                | 975 L.F. |
| 8053     | 4" schedule 80 rigid polyvinyl chloride conduit - trenched.                | 30 L.F.  |
| 8058     | Metered service pedestal.  | 1 EA     |
| 8061     | Electrical cable 1-conductor No. 4 AWG THHN/THWN.                          | 35 L.F.  |
| 8065     | Non-Invasive detector with 500' lead-in cable.                             | 2 EA     |
| 8067     | Furnish and install electrical handhole.                                   | 8 EA     |
| 8069     | Install ground mounted sign.   | 42 SF    |
| 8070     | Install overhead sign.   | 33 SF    |
| 8071     | Video detector camera.   | 1 EA     |
| 8077     | Steel pole with a single 50' mast arm.                                     | 1 EA     |
| 8091     | Ground rod 3/4" dia. x 10' length.   | 5 EA     |
| 8093     | 12" vehicular traffic signal head section.                                 | 21 EA    |
| 8096     | Cut, clean, galvanize and cap traffic signal structure.                    | 1 EA     |
| 8101     | Electrical cable - 5 conductor (No. 14 AWG).                               | 65 L.F.  |
| 8102     | Electrical cable - 7 conductor (No. 14 AWG).                               | 305 L.F. |
| 8112     | Install controller and cabinet base mount.                                 | 1 EA     |

C. EQUIPMENT TO BE REMOVED

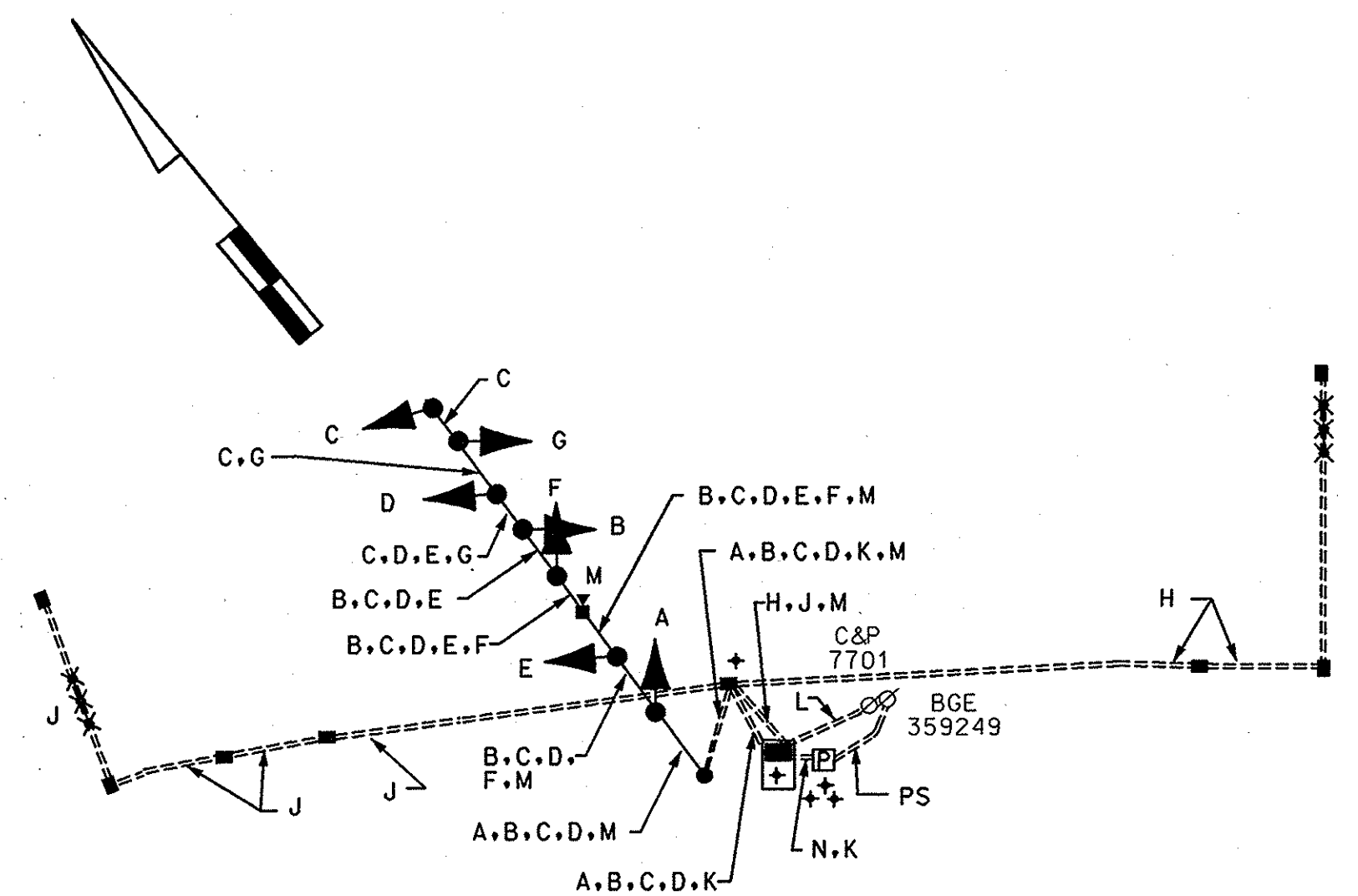
All materials removed by the Contractor shall become property of the Contractor.

PHASE CHART

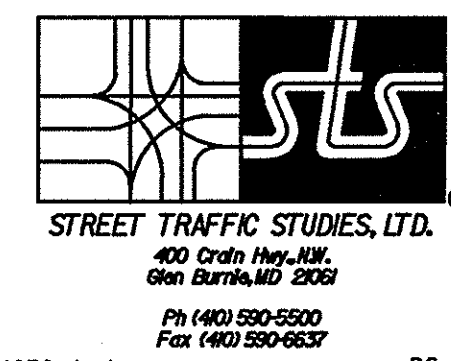
| 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|-----|-----|-----|-----|-----|-----|-----|
| (R) | (R) | (R) | (R) | (R) | (R) | (R) |
| (Y) | (Y) | (Y) | (Y) | (Y) | (Y) | (Y) |
| (G) | (G) | (G) | (G) | (G) | (G) | (G) |

|                    |      |      |      |      |      |      |      |   |
|--------------------|------|------|------|------|------|------|------|---|
| PHASE 2 & 6        | G    | G    | G    | G    | G    | R    | R    | + |
| 2 & 6 CHANGE       | Y    | Y    | Y    | Y    | Y    | R    | R    | + |
| PHASE 4            | R    | R    | R    | R    | R    | G    | G    | + |
| 4 CHANGE           | R    | R    | R    | R    | R    | Y    | Y    | + |
| FLASHING OPERATION | FL/Y | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R | + |

WIRING DIAGRAM



| WIRING KEY                                  |   |
|---|---|
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)        |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)        |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | NON INVASIVE MICROLOOP LEAD-IN CABLE (500')         |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | K - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.) |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | L - TELEPHONE DROP                                  |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | M - CONTROL CABLE 100' VIDEO DETECTOR               |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | N - 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)   |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | PS - PROPOSED UNDERGROUND POWER SERVICE BY BGE      |
| A, B, C, D, E, F, G, H, J, K, L, M, N, P, S | + - GROUND ROD                                      |



4832q1.dgn D6-32

PLOTTED: \$DATE\$  
FILE: \$FILE\$

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
  
MD 99 (OLD FREDERICK RD)  
AND WOODSTOCK ROAD

SCALE none DATE 9-1-05 CONTRACT NO. AT7175185

DESIGNED BY JA COUNTY HOWARD  
DRAWN BY RC LOGMILE 13009903.72  
CHECKED BY TIMS NO. G790  
F.A.P. NO. TOD NO.

TS NO. 4421 DRAWING NO. OF SHEET NO. 2 OF 2